

Mr. Rodney Camp  
Profile Extrusion Company  
P.O. Box 505  
Boonville, Indiana 47601

Re: **173-11755-00024**  
**First Minor** Permit Revision to  
**MSOP 173 10882-00024**

Dear Mr. Camp:

Profile Extrusion Company was issued a minor source operating permit on July 19, 1999 for a stationary secondary aluminum processing source. A letter requesting a revision to this permit was received on January 10, 2000. Pursuant to the provisions of 326 IAC 2-6.1-6 a minor permit revision to this permit is hereby approved as described in the attached Technical Support Document.

The modification consists of replacing the existing 26.0 million British thermal units per hour reverberatory furnace #2 with a new 24.0 million British thermal units per hour reverberatory furnace #2. There will be no change in the process weight rate.

The following construction conditions are applicable to the proposed project:

1. The data and information supplied with the application shall be considered part of this permit revision approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAM).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Pursuant to IC 13-15-5-3, this approval to construct becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Pursuant to 326 IAC 2-6.1-6, the minor source operating permit shall be revised by incorporating the minor permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this permit revision which includes this letter, the attached operating conditions applicable to these emission units, and revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Paula M. Miano, c/o OAM, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Management

PMM:MES  
Attachments

cc: File - Warrick County  
U.S. EPA, Region V  
Warrick County Health Department  
Air Compliance Section Inspector - Scott Anslinger  
Compliance Data Section - Karen Nowak  
Administrative and Development - Janet Mobley  
Technical Support and Modeling - Mendy Jones  
Southwest Regional Office

**CONSTRUCTION PERMIT  
and MINOR SOURCE OPERATING PERMIT  
OFFICE OF AIR MANAGEMENT**

**Profile Extrusion Company  
298 Essex Drive West  
Boonville, Indiana 47601**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: MSOP 173-10882-00024	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date: July 19, 1999
First Minor Permit Revision 173-11755-00024	Pages Affected: 4, 16, 17
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

## SECTION A

## SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

### A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

---

The Permittee owns and operates a stationary secondary aluminum processing source.

Authorized Individual: Rodney N. Camp  
Source Address: 298 Essex Drive, Boonville, Indiana 47601  
Mailing Address: P.O. Box 505, Boonville, Indiana 47601  
Phone Number: 812-897-3604  
SIC Code: 3341  
County Location: Warrick  
County Status: Attainment for all criteria pollutants  
Source Status: Minor Source Operating Permit  
Minor Source, under PSD  
Minor Source, Section 112 of the Clean Air Act

### A.2 Emissions units and Pollution Control Equipment Summary

---

This stationary source is approved to construct and operate the following emissions units and pollution control devices:

- (a) one (1) natural gas-fired reverberatory furnace, known as furnace #1, installed prior to 1968, with the furnace exhausting to stack #1B and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at 19.0 million British thermal units, maximum capacity of 4.25 tons of aluminum per hour.
- (b) one (1) natural gas-fired reverberatory furnace, known as furnace #2, with the furnace exhausting to stack #2C and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at 24.0 million British thermal units per hour, maximum capacity of 4.25 tons of aluminum per hour.
- (c) one (1) natural gas-fired reverberatory furnace, known as furnace #6, with combustion by-products exhausting to stack #3D, using liquefied propane gas for backup rated at 20.0 million British thermal units, maximum capacity of 3.31 tons of aluminum per hour.
- (d) one (1) natural gas-fired homogenizing furnace, known as furnace #3, installed prior to 1968, exhausting through general ventilation, using liquefied propane gas for backup, rated at 18.0 million British thermal units, maximum capacity of 3.31 tons of aluminum per hour.
- (e) two (2) natural gas-fired homogenizing ovens, known as oven #4 and oven #5, installed in 1997, equipped with four (4) 2.5 million British thermal units per hour total.

## SECTION D.1

## EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (a) one (1) natural gas-fired reverberatory furnace, known as furnace #1, installed prior to 1968, with the furnace exhausting to stack #1B and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at 19.0 million British thermal units, maximum capacity of 4.25 tons of aluminum per hour.
- (b) one (1) natural gas-fired reverberatory furnace, known as furnace #2, with the furnace exhausting to stack #2C and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at 24.0 million British thermal units per hour, maximum capacity of 4.25 tons of aluminum per hour.
- (c) one (1) natural gas-fired reverberatory furnace, known as furnace #6, with combustion by-products exhausting to stack #3D, using liquefied propane gas for backup rated at 20.0 million British thermal units, maximum capacity of 3.31 tons of aluminum per hour.
- (d) one (1) natural gas-fired homogenizing furnace, known as furnace #3, installed prior to 1968, exhausting through general ventilation, using liquefied propane gas for backup, rated at 18.0 million British thermal units, maximum capacity of 3.31 tons of aluminum per hour.
- (e) two (2) natural gas-fired homogenizing ovens, known as oven #4 and oven #5, installed in 1997, equipped with four (4) 2.5 million British thermal units per hour total.
- (f) one (1) pouring and casting process, installed prior to 1968, exhausted to general ventilation, with a an increase in maximum throughput from 4.0 tons of aluminum per hour to 5.0 tons of aluminum per hour.

### Emission Limitations and Standards

#### D.1.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

- (a) Pursuant to CP 173-6212-00024, issued on July 23, 1997, the particulate matter (PM) from furnace #1 shall be limited to 9.14 pounds per hour.

- (b) The particulate matter (PM) from furnace #2 shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

for a process weight rate (P) for furnace #2 of 3.31 tons of aluminum per hour, the allowable PM emission rate is 9.14 pounds per hour.

- (c) The particulate matter (PM) from furnace #6 shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

for a process weight rate (P) for furnace #6 of 3.31 tons per hour the allowable PM emission rate is 9.14 pounds per hour.

### **Compliance Determination Requirements**

#### **D.1.2 Testing Requirements [326 IAC 3-6]**

- (a) During the period between 30 and 36 months after issuance of this permit, the Permittee shall perform PM testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for, or other methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. PM<sub>10</sub> includes filterable and condensable PM<sub>10</sub>. In addition to these requirements, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance.
- (b) Within 60 days after achieving the maximum production rate for the 24.0 million British thermal units per hour for furnace #2, but no later than 180 days after initial start-up, the Permittee shall perform PM testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for, or other methods as approved by the Commissioner to show compliance with D.1.1. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.

### **Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [ 326 IAC 2-6.1-5(a)(2)]**

#### **D.1.3 Visible Emissions Notations**

- (a) Daily visible emission notations of all stack exhausts shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

### **Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [ 326 IAC 2-6.1-5(a)(2)]**

#### **D.1.4 Record Keeping Requirements**

To document compliance with Condition D.1.3, the Permittee shall maintain records of daily visible emission notations of all stack exhaust.

**Indiana Department of Environmental Management  
Office of Air Management**

**Technical Support Document (TSD) for a Permit Revision to a  
Minor Source Operating Permit**

**Source Background and Description**

<b>Source Name:</b>	<b>Profile Extrusion Company</b>
<b>Source Location:</b>	<b>298 Essex Drive, Boonville, Indiana</b>
<b>County:</b>	<b>Warrick</b>
<b>SIC Code:</b>	<b>3341</b>
<b>Operation Permit No.:</b>	<b>MSOP 173-10882-00024</b>
<b>Operation Permit Issuance Date:</b>	<b>July 19, 1999</b>
<b>Permit Revision No.:</b>	<b>173-11755-00024</b>
<b>Permit Reviewer:</b>	<b>Paula M. Miano/MES</b>

The Office of Air Management (OAM) has reviewed a revision application from Profile Extrusion Company relating to the operation of a reverberatory furnace. This revision consists of replacing the existing 26.0 million British thermal units per hour furnace #2 with the following:

one (1) natural gas-fired reverberatory furnace, known as furnace #2, with the furnace exhausting to stack #2C and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at 24.0 million British thermal units per hour, maximum capacity of 4.25 tons of aluminum per hour.

**History**

On January 10, 1999, Profile Extrusion Company submitted an application to the OAM requesting to replace their existing 26.0 million British thermal units per hour reverberatory furnace #2 with a 24.0 million British thermal units per hour reverberatory furnace. This revision does not change the melt capacity of furnace #2. In addition this revision does not in any way change the remaining processes. Profile Extrusion Company was issued an Minor Source Operating Permit on July 19, 1999.

Although the source address has changed, the physical location of the source has not changed.

**Existing Approvals**

The source has been operating under previous approvals including, but not limited to, the following:

- (a) MSOP 173-10882-00024, issued July 19, 1999,
- (b) OP 173-6212-00024, issued on July 23, 1997; and
- (c) CP 173-8941-00024, issued on November 4, 1997.

**Enforcement Issue**

There are no enforcement actions pending.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
Existing A	combustion	42.0	5.75	8,200	300
Existing 2C	melting	32.0	3.5	23,800	125

### Recommendation

The staff recommends to the Commissioner that the Minor Source Permit Revision be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on January 10, 2000.

### Emission Calculations

See pages 1 through 4 of 4 of Appendix A of this document for detailed emissions calculations

### Potential To Emit From this Revision

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

Pollutant	Potential To Emit (tons/year)
PM	6.91
PM <sub>10</sub>	7.02
SO <sub>2</sub>	0.063
VOC	3.48
CO	8.83
NO <sub>x</sub>	21.8

Note: The above table represents the PTE from the new furnace #2. This includes PTE from combustion and a maximum throughput of 3.31 tons of aluminum per hour. Because the furnace operates in a batch cycle the maximum throughput of 3.31 tons of aluminum per hour is used to calculate PTE and not 4.25 tons of aluminum per hour.



HAPs	Potential To Emit (tons/year)
Benzene	less than ten
Dichlorobenzene	less than ten
Formaldehyde	less than ten
Hexane	less than ten
Toluene	less than ten
Lead	less than ten
Cadmium	less than ten
Chromium	less than ten
Manganese	less than ten
Nickel	less than ten
TOTAL	less than twenty-five

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and NO<sub>x</sub> from the new facility is equal to or greater than five (5) tons per year but less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1-6(g)(4)(A) and requires a minor permit revision.
- (b) Fugitive Emissions  
This source is not a major stationary source because although it is one of the twenty-eight (28) listed source categories under 326 IAC 2-2, it does not emit more than one-hundred (100) tons per year of any regulated pollutant.

#### Actual Emissions

No previous emission data has been received from the source.

#### Limited Potential to Emit

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units.

	Limited Potential to Emit (tons/year)						
Process/facility	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
Furnace #2 (Process)	6.22	6.22	0.00	2.90	0.00	0.00	0.00
Furnace #2 (Combustion)	0.689	0.799	0.063	0.578	8.83	21.8	0.20
Total Emissions	6.91	7.02	0.063	3.48	8.83	21.8	0.20

This revision to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply. This source will be issued a Permit Revision to a Minor Source Operating Permit (MSOP) because all criteria pollutants emitted are less than 100 tons per year and all individual HAPS are less than ten (10) tons per year and any combination of HAPS are less than twenty-five (25) tons per year.

### County Attainment Status

The source is located in Warrick County.

Pollutant	Status
PM <sub>10</sub>	attainment
SO <sub>2</sub>	attainment
NO <sub>2</sub>	attainment
Ozone	attainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Warrick County has been designated as attainment or unclassifiable for ozone.

### Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR art 63) applicable to this source.

### State Rule Applicability - Entire Source

(326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

Although this source is one of the twenty eight (28) listed source categories under 326 IAC 2-2, all criteria pollutant potential to emit levels are less than 100 tons per year. Therefore, the requirements of 326 IAC 2-2 do not apply.

326 IAC 2-6 (Emission Reporting)

This source is located in Warrick County and the potential to emit any criteria pollutants is less than one-hundred (100) tons per year; therefore, 326 IAC 2-6 does not apply.

The new furnace #2 is rated at 24.0 million British thermal units per hour and it is replacing the existing furnace #2 rated at 26.0 million British thermal units per hour, and all other process emissions have not changed. Therefore, the source will maintain its MSOP status.

### 326 IAC 5-1 (Opacity Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

### State Rule Applicability - Individual Facilities

#### 326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from furnace #2 shall be limited to 9.14 pounds per hour based on a process weight rate of 3.31 tons per hour. A process weight rate of 3.31 tons per hour is used and not 4.25 tons per hour because furnace #2 operates in a batch cycle. The worst case potential PM emission rate from furnace #2 is 1.42 pounds per hour. Therefore, the furnaces comply with 326 IAC 6-3-2.

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour is accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour.}$$

#### 326 IAC 8-1-6 (New facilities; general reduction requirements)

Since the VOC emissions from the source are less than 25 tons per year, the requirements of 326 IAC 8-1-6 do not apply.

### Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

## Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

- (a) This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations, page 3 of 4, for detailed air toxic calculations.

## Proposed Changes

### A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

---

The Permittee owns and operates a stationary secondary aluminum processing source.

Authorized Individual: Rodney N. Camp  
Source Address: ~~Highway 62 West~~ **298 Essex Drive**, Boonville, Indiana 47601  
Mailing Address: P.O. Box 505, Boonville, Indiana 47601  
Phone Number: 812-897-3604  
SIC Code: 3341  
County Location: Warrick  
County Status: Attainment for all criteria pollutants  
Source Status: Minor Source Operating Permit  
Minor Source, under PSD  
Minor Source, Section 112 of the Clean Air Act

### A.2 Emissions units and Pollution Control Equipment Summary

---

This stationary source is approved to construct and operate the following emissions units and pollution control devices:

- (a) one (1) natural gas-fired reverberatory furnace, known as furnace #1, installed prior to 1968, with the furnace exhausting to stack #1B and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at 19.0 million British thermal units, maximum capacity of 4.25 tons of aluminum per hour.
- (b) one (1) natural gas-fired reverberatory furnace, known as furnace #2, ~~installed prior to 1968~~, with the furnace exhausting to stack #2C and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at ~~26.0~~ **24.0** million British thermal units per hour, maximum capacity of 4.25 tons of aluminum per hour.
- (c) one (1) natural gas-fired reverberatory furnace, known as furnace #6, with combustion by-products exhausting to stack #3D, using liquefied propane gas for backup rated at 20.0 million British thermal units, maximum capacity of 3.31 tons of aluminum per hour.
- (d) one (1) natural gas-fired homogenizing furnace, known as furnace #3, installed prior to 1968, exhausting through general ventilation, using liquefied propane gas for backup, rated at 18.0 million British thermal units, maximum capacity of 3.31 tons of aluminum per hour.
- (e) two (2) natural gas-fired homogenizing ovens, known as oven #4 and oven #5, installed in 1997, equipped with four (4) 2.5 million British thermal units per hour total.

- (f) one (1) pouring and casting process, installed prior to 1968, exhausted to general ventilation, with a an increase in maximum throughput from 4.0 tons of aluminum per hour to 5.0 tons of aluminum per hour.
- (g) one (1) diesel fueled emergency generator, installed in 1997, exhausted to stack #4, rated at 335 horsepower.

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (a) one (1) natural gas-fired reverberatory furnace, known as furnace #1, installed prior to 1968, with the furnace exhausting to stack #1B and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at 19.0 million British thermal units, maximum capacity of 4.25 tons of aluminum per hour.
- (b) one (1) natural gas-fired reverberatory furnace, known as furnace #2, installed prior to 1968, with the furnace exhausting to stack #2C and combustion by-products exhausting to stack #A, using liquefied propane gas for backup, rated at ~~26.0~~ **24.0** million British thermal units per hour, maximum capacity of 4.25 tons of aluminum per hour.
- (c) one (1) natural gas-fired reverberatory furnace, known as furnace #6, with combustion by-products exhausting to stack #3D, using liquefied propane gas for backup rated at 20.0 million British thermal units, maximum capacity of 3.31 tons of aluminum per hour.
- (d) one (1) natural gas-fired homogenizing furnace, known as furnace #3, installed prior to 1968, exhausting through general ventilation, using liquefied propane gas for backup, rated at 18.0 million British thermal units, maximum capacity of 3.31 tons of aluminum per hour.
- (e) two (2) natural gas-fired homogenizing ovens, known as oven #4 and oven #5, installed in 1997, equipped with four (4) 2.5 million British thermal units per hour total.
- (f) one (1) pouring and casting process, installed prior to 1968, exhausted to general ventilation, with a an increase in maximum throughput from 4.0 tons of aluminum per hour to 5.0 tons of aluminum per hour.

## Emission Limitations and Standards

### D.1.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

- (a) Pursuant to CP 173-6212-00024, issued on July 23, 1997, the particulate matter (PM) from either furnace #1 or furnace #2 shall be limited to 9.14 pounds per hour.
- (b) **The particulate matter (PM) from furnace #2 shall be limited by the following:**

**Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:**

$$E = 4.10 P^{0.67}$$

**where E = rate of emission in pounds per hour and  
P = process weight rate in tons per hour**

**for a process weight rate (P) for furnace #2 of 3.31 tons of aluminum per hour per hour, the allowable PM emission rate is 9.14 pounds per hour.**

- (b-c) The particulate matter (PM) from furnace #6 shall be limited by the following:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

for a process weight rate (P) for furnace #6 of 3.31 tons per hour the allowable PM emission rate is 9.14 pounds per hour.

### Compliance Determination Requirements

#### D.1.2 Testing Requirements [326 IAC 3-6]

- (a) During the period between 30 and 36 months after issuance of this permit, the Permittee shall perform PM testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for, or other methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.  $PM_{10}$  includes filterable and condensable  $PM_{10}$ . In addition to these requirements, IDEM may require compliance testing when necessary to determine if the emissions unit is in compliance.
- (b) **Within 60 days after achieving the maximum production rate for the 24.0 million British thermal units per hour for furnace #2, but no later than 180 days after initial start-up, the Permittee shall perform PM testing utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for, or other methods as approved by the Commissioner to show compliance with D.1.1. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.**

### Conclusion

The operation of this reverberatory furnace shall be subject to the conditions of the attached proposed MSOP Minor Permit Revision No. 173-11755-00024.

**Appendix A: Emissions Calculations****Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****Company Name: Profile Extrusion Company****Address City IN Zip: 298 Essex Drive Boonville, IN 47601****MSOP: 173-11755****Plt ID: 173-00024****Reviewer: Paula M. Miano****Date: January 10, 2000****Furnace #2**Heat Input Capacity  
MMBtu/hrPotential Throughput  
MMCF/yr

24.0

210.2

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
Potential Emission in tons/yr	0.200	0.799	0.063	**see below	0.578	8.83

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations****Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler****HAPs Emissions****Company Name: Profile Extrusion Company****Address City IN Zip: 298 Essex Drive Boonville, IN 47601****CP: 173-11755****Pit ID: 173-00024****Reviewer: Paula M. Miano****Date: January 10, 2000****Furnace #2****HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	2.208E-04	1.261E-04	7.884E-03	1.892E-01	3.574E-04

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	5.256E-05	1.156E-04	1.472E-04	3.995E-05	2.208E-04

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.



**Appendix A: Emission Calculations**  
**LPG-Propane - Industrial Boilers**  
(Heat input capacity: > 10 MMBtu/hr and < 100 MMBtu/hr)

Page 3 of 4 TSD App A

**Company Name:** Profile Extrusion Company  
**Address City IN Zip:** 298 Essex Drive Boonville, IN 47601  
**CP:** 173-11755  
**Plt ID:** 173-00024  
**Reviewer:** Paula M. Miano  
**Date:** April 21, 1999

**Furnace #2**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
kgals/year

SO2 Emission factor = 0.10 x S

S = Sulfur Content = 0.02 grains/100ft<sup>3</sup>

24.0

2298

Emission Factor in lb/kgal	Pollutant					
	PM*	PM10*	SO2 0.002 (0.10S)	NOx 19.0	VOC 0.5 **TOC value	CO 3.2
Potential Emission in tons/yr	0.689	0.689	0.002	21.8	0.574	3.68

\*PM emission factor is filterable PM only. PM10 emission factor is assumed to be the same as PM based on a footnote in Table 1.5-1, therefore PM10 is filterable only as well.

\*\*The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

**Methodology**

1 gallon of LPG has a heating value of 94,000 Btu

1 gallon of propane has a heating value of 91,500 Btu (use this to convert emission factors to an energy basis for propane)

(Source - AP-42 (Supplement B 10/96) page 1.5-1)

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0915 MMBtu

Emission Factors are from AP42 (Supplement B 10/96), Table 1.5-1 (SCC #1-02-010-02)

Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

**Appendix A: Emission Calculations  
Secondary Aluminum Production**

Page 4 of 4 TSD App A

**Company Name:** Profile Extrusion Company  
**Address City IN Zip:** 298 Essex Drive Boonville, IN 47601  
**CP:** 173-11755  
**Plt ID:** 173-00024  
**Reviewer:** Paula M. Miano  
**Date:** January 10, 2000

Potential Throughput  
tons/hr

**Reverberatory Furnace #2**

3.31

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/ton	0.429	0.429	0.000	0.0	0.2	0.0
Potential Emission in tons/yr	6.22	6.22	0.000	0.000	2.90	0.000

\*Based on 1990 stack tests of the existing furnace an average potential emission rate of 1.42 lb/s/hr was observed. Since the furnace operates in a batch cycle with melting, fluxing and casting all performed, this furnace has the capability of handling 3.31 tons/hr in batch cycles.  $1.42 \text{ lbs/hr} / 3.31 \text{ tons/hr} = 0.429 \text{ lbs/ton}$